(MEM) **20**B that stores a program of computer instructions (PROG) **20**C, and it also may have a suitable wireless interface, such as RF transmitter/receiver combination **20**D for communication with the encoder device **10** via one or more antennas. Similar to the encoder processing, the decoder processing may be done by a separate DP as shown, or by the main central processing DP **20**A, or some combination of both processing chips or more than only those two.

[0119] At least one of the PROGs **10**C/**20**C is assumed to include program instructions that, when executed by the associated DP **10**A/**20**A, enable the device to operate in accordance with exemplary embodiments of this invention as detailed above. That is, various exemplary embodiments of this invention may be implemented at least in part by computer software executable by the DP **10**A of the encoder device **10**; by the DP **20**A of the decoder device **20**, or by hardware or by a combination of software and hardware (and firmware).

[0120] The computer readable MEMs **10**B/**20**B may be of any type suitable to the local technical environment and may be implemented using any one or more suitable data storage technology, such as semiconductor based memory devices, flash memory, magnetic memory devices and systems, optical memory devices and systems, fixed memory and removable memory, electromagnetic, infrared, or semiconductor systems. Following is a non-exhaustive list of more specific examples of the computer readable storage medium/memory: an electrical connection having one or more wires, a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage device, a magnetic storage device, or any suitable combination of the foregoing.

[0121] The DPs **10**A/**20**A may be of any type suitable to the local technical environment, and may include one or more of general purpose computers, special purpose computers, microprocessors, digital signal processors (DSPs) and processors based on a multicore processor architecture, as non-limiting examples. The wireless interfaces (e.g., the radios **10**D/**20**D) may be of any type suitable to the local technical environment and may be implemented using any suitable communication technology such as individual transmitters, receivers, transceivers or a combination of such components.

[0122] In general, the various embodiments of the encoder device **10** and/or the decoder device **20** can include, but are not limited to, smart phones with cameras and/or graphical displays, machine-to-machine (M2M) communication devices, cellular telephones, personal digital assistants (PDAs) having video recording and/or playback capabilities, portable computers having video recording and/or playback capabilities, image capture devices such as digital cameras having video recording and/or playback capabilities, gaming devices having video recording and/or playback capabilities, music storage and playback appliances having video recording and/or playback capabilities, Internet appliances permitting video recording and/or playback capabilities, as well as portable units or terminals that incorporate combinations of such functions. Any of these may be embodied as a hand-portable device, a wearable device, a device that is implanted in whole or in part, a vehicle-mounted communication device, and the like.

[0123] It should be understood that the foregoing description is only illustrative. Various alternatives and modifications can be devised by those skilled in the art. For example, features recited in the various dependent claims could be combined with each other in any suitable combination(s). In addition, features from different embodiments described above could be selectively combined into an embodiment that is not specifically detailed herein as separate from the others. Accordingly, the description is intended to embrace all such alternatives, modifications and variances which fall within the scope of the appended claims.

[0124] The following abbreviations that may be found in the specification and/or the drawing figures are defined as follows. These terms are used consistent with their ordinary meaning, as set forth in the H.265/HEVC standard of ITU-T.

[0125] AC Alternating Current (coefficient of the DCT)

[0126] AVC Advanced Video Coding (H.264/AVC standard)

[0127] CTU Coding Tree Unit

[0128] CU Coding Unit

[0129] DCT Discrete Cosine Transform

[0130] DPB Decoded Picture Buffer

[0131] DST Discrete Sine Transform

[0132] DC Direct Current (coefficient of the DCT)

[0133] HEVC High Efficiency Video Coding (H.265/HEVC standard)

[0134] LCU Largest Coding Unit

[0135] ITU-T International Telecommunication Union-Telecommunication Standardization sector

[0136] MVC Multi-view Video Coding

[0137] MVP Motion Vector Prediction

[0138] PU Prediction Unit

[0139] SNR Signal to Noise ratio

[0140] SVC Scalable Video Coding

[0141] TU Transform Unit

1. A method for decoding a video stream, the method comprising:

receiving with an encoded video stream an indication of a prediction mode and an indication of one or more prediction helper values;

while decoding the encoded video stream, calculating a predicted value for each of at least one sample based on the received indication of the prediction mode and on the received one or more prediction helper values; and

tangibly outputting the decoded video stream to at least one of a computer readable memory and a graphical display, such that the decoded video stream that is output incorporates each of the at least one sample as decoded using the respective calculated predicted value.

2. The method according to claim **1**, wherein the indication of the prediction mode indicates at least one of: vertical prediction mode, horizontal prediction mode, combined vertical and horizontal prediction mode, merge mode, scalable mode in which the encoded video stream comprises a base layer and at least one enhancement layer, direct current mode, and planar mode.

3. The method according to claim **1**, wherein decoding the encoded video stream comprises, for each said sample having a corresponding non-zero prediction helper value:

calculating the predicted value by applying the predicted helper value to a corresponding value of a reference sample that is located along a prediction direction